

STATUS OF THE CLAIMS

Claims 26-48 were pending.

Claims 32-35, 39-42 and 46-48 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Eskins, et al. (US 5,676,994) in view of Van Soest (US 6,340,527), Fletcher, et al. (US 6,261,543), and Goldemberg (SCC Seminar, Drug & Cosmetic Industry, 1996).

Claims 26-28 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Eskins, et al. (US 5,676,994) in view of Van Soest (US 6,340,527), Fletcher, et al. (US 6,261,543), Goldemberg (SCC Seminar, Drug & Cosmetic Industry, 1996) and Macaulay (US 6,362,146).

Claims 29-31 and 43-45 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Eskins, et al. (US 5,676,994) in view of Van Soest (US 6,340,527), Fletcher, et al. (US 6,261,543), Goldemberg (SCC Seminar, Drug & Cosmetic Industry, 1996), Macaulay (US 6,362,146) and Ashley ("Sunburn and Sunscreen Preparations", Poucher's Perfumes, Cosmetics and Soaps).

Claims 26-48 are presented for reconsideration.

REMARKS

Claims 32-35, 39-42 and 46-48 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Eskins, et al. (US 5,676,994) in view of Van Soest (US 6,340,527), Fletcher, et al. (US 6,261,543), and Goldemberg (SCC Seminar, Drug & Cosmetic Industry, 1996). Eskins teaches a non-separable unmodified starch-oil composition useful for food, agriculture, or pharmaceutical and cosmetic carriers or vehicles. In contrast, the present invention teaches the advantages of using a cationic starch. For examples, see page 5, line 29, et seq. which states "hydrophobic compounds encapsulated with a cationically modified starch advantageously adhere to anionic substrates such as hair and skin. This increases the amount of contact between the hydrophobic compound and skin or hair, which aids in rinse-off and rub-off protection. This property allows for the same level of performance using less of the hydrophobic compound." This advantage of cationic modified starch is evidenced by Examples 8 and 9. Example 8 shows that the cationic starch resulted in an intensity value of 17.53 compared to 1.99 for the unmodified starch, an eight-fold increase in substantivity to the substrate. Example 9 shows a wet combing force reduction of 60% for the cationic starch compared to only 17% for the unmodified starch, about a four-fold improvement. Thus, the superiority of the cationic starch over the unmodified starch is clear.

The Examiner uses the Van Soest reference to remedy this deficiency. Van Soest teaches the use of crosslinked starch shells containing an active ingredient. However, Van Soest uses surfactants to promote formation of the emulsion. In contrast, the presently claimed invention is surfactant-free. Further, Van Soest uses modified granular starch (see column 2, line 6, et seq.) while the present invention uses non-granular starches (jet cooked). The skilled artisan would not combine Van Soest which requires emulsifiers or surfactants and granular starches with Eskins which to result in the presently claimed surfactant-free composition.

Further, Van Soest describes microparticles that contain an active ingredient in a starch shell, stating that any granular starch can be used and listing numerous suitable derivatives, including oxidized starch, carboxy starch, dialdehyde starch, carboxyalkylated starch, sulphated starch, phosphated starch, cationic starch, and the like. The starch particles can be used in cosmetic applications. While cationic starches are listed in a laundry list of possible starches, there is no recognition that a cationic starch has the superior attributes recognized in the present invention.

The Soest list teaches substantially all allowable starch derivatives which meet the granular retention preference of the Van Soest invention. Van Soest treats all these starches equally, despite their widely varying functionality and no suggestion is given to chose the cationic starches as being superior for a personal care application. If anything, the reference teaches the preference of using phosphated starches as this starch is used in all the examples.

There is also no motivation to use the emulsion method described in the Van Soest reference to produce starch-encapsulated hydrophobic compounds that are non-separable in a personal care or cosmetic aqueous formulation. Indeed, the Van Soest reference is focused on forming particles using granular starch, while the Eskins reference demonstrates that starch-encapsulated particles formed by the emulsion process of the Van Soest reference do not form stable, aqueous formulation. This alone would lead one skilled in the art away from combining Soest and Eskins. Eskins uses non-granular starch to encapsulate. There is no motivation to combine these references which use different starch types (granular v. nongranular) and encapsulation methods, and specifically choose a cationic starch. The fact that Van Soest uses surfactants to promote formation of the emulsion would further keep the skilled artisan from combining these references to result in the presently claimed invention.

The Fletcher reference also does not cure the deficiencies of Eskins and is cited to show the use of a cationically-modified starch. The Fletcher reference does not disclose an aqueous formulation. The Fletcher reference fails to disclose a starch-encapsulated hydrophobic compound, or a stable aqueous personal care or cosmetic formulation. Fletcher also uses a surfactant. Thus, Fletcher does not remedy the deficiencies of Eskins and does not obviate the present invention in view of the primary references as one skilled in the art would not be motivated to combine Fletcher with Eskins due to these numerous differences.

The Examiner also uses Goldemberg to further show that it is well known in the cosmetic art to employ cationic modified starch. Goldemberg discusses the entrapment of extracts of nutgall and green tea by glycospheres which contain a cationic polysaccharide core. Nutgall and green tea extracts are both water soluble (hydrophilic) as opposed to the present application which claims hydrophobic materials. Not much is disclosed about the polysaccharide core of Goldemberg. There is no teaching of whether or not the cosmetic formulations made with

glycospheres are stable, aqueous, and surfactant-free. The fact that Goldemberg entraps water soluble materials as opposed to hydrophobic materials and the lack of information would dissuade one skilled in the art from combining Goldemberg with Eskins.

Thus, in view of the above arguments, the obviousness rejection has been overcome.

Claims 26-28 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Eskins, et al. (US 5,676,994) in view of Van Soest (US 6,340,527), Fletcher, et al. (US 6,261,543), Goldemberg (SCC Seminar, Drug & Cosmetic Industry, 1996) and Macaulay (US 6,362,146).

The above arguments apply with respect to Eskins, Van Soest, Fletcher and Goldemberg apply to claims 26-28 as well, but have the further deficiency of failing to teach sunscreen active ingredients as admitted by the Examiner. Macauley is used to remedy such additional deficiency. However, Macauley does not remedy the deficiencies of Eskins, Van Soest, Fletcher and Goldemberg and thus the present claims are not obvious.

Further, one skilled in the art would not combine Macaulay with the other cited art as it teaches sunscreens that are encapsulated in waxes and oils, not in starch. The Examiner states that one skilled in the art would be motivated to combine Eskins and Macauley because of the "expectation of successfully producing controlled-release sunscreen compositions." Even if all the other claim limitations were met, there is no indication that substituting the starch of the present invention for the waxes and oils of Macauley would successfully result in encapsulated sunscreen compositions. Sunscreen compositions and their effectiveness are affected by numerous parameters with varied results. At best, it would be obvious to try to combine Macauley with the other references to obtain the present invention, but certainly not obvious that such would succeed. Further, Applicants believe that the Examiner is using hindsight to piece together numerous (5) references to obtain what is clearly an unobvious result. Thus, the present rejection has been overcome.

Claims 29-31 and 43-45 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Eskins, et al. (US 5,676,994) in view of Van Soest (US 6,340,527), Fletcher, et al. (US 6,261,543), Goldemberg (SCC Seminar, Drug & Cosmetic Industry, 1996), Macaulay (US 6,362,146) and Ashley ("Sunburn and Sunscreen Preparations", Poucher's Perfumes, Cosmetics and Soaps). Once again,

Applicants contend that the Examiner is using hindsight to piece together numerous (6) references to obtain what is clearly an unobvious result. As described above and admitted by the Examiner, the first five references fail to teach the present invention. Ashley is cited as a secondary reference to teach the water content in cosmetic compositions and does not remedy the deficiencies of the primary references. Ashley describes oil/water and water/oil emulsions in the form of creams and lotions. These compositions require emulsifiers or surfactants for particle stability. In contrast, the personal care formulations of the present invention do not contain surfactants which can result in irritation and allergic reactions.

There is no teaching or suggestion in the Ashley reference to any starch encapsulation of an active, and thus the Ashley reference fails to heal the defects in the other references to teach or suggest all of Applicants claim limitations. Further, one skilled in the art would not combine Ashley which requires emulsifiers or surfactants to result in the presently claimed surfactant-free composition.

In view of the foregoing, Applicant submits the Application is now in condition for allowance and respectfully requests early notice to that effect.

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